Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type
1.000	9.174	0.115	80.0	0.001	5.00	0.0	0.600	o	150	Pipe/Conduit
1.001	28.112	0.281	100.0	0.005	0.00	0.0	0.600	o	150	Pipe/Conduit
2.000	20.237	0.696	29.1	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit
1.002	14.226	0.142	100.0	0.018	0.00	0.0	0.600	o	150	Pipe/Conduit
1.003	5.534	0.055	100.0	0.004	0.00	0.0	0.600	o	150	Pipe/Conduit
3.000	7.034	0.120	58.6	0.015	5.00	0.0	0.600	o	150	Pipe/Conduit
4.000	7.770	0.510	15.2	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit
3.001	13.301	0.393	33.8	0.014	0.00	0.0	0.600	o	150	Pipe/Conduit
1.004	9.699	0.109	88.8	0.008	0.00	0.0	0.600	o	150	Pipe/Conduit
5.000	12.876	0.270	47.7	0.002	5.00	0.0	0.600	o	150	Pipe/Conduit
5.001	12.988	0.130	100.0	0.002	0.00	0.0	0.600	o	150	Pipe/Conduit
1.005	34.639	0.451	76.8	0.021	0.00	0.0	0.600	o	225	Pipe/Conduit
6.000	25.422	0.960	26.5	0.004	5.00	0.0	0.600	o	150	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
1.000	85.870	0.001	0.0	1.12	19.9
1.001	85.755	0.006	0.0	1.00	17.8
2.000	86.170	0.000	0.0	1.87	33.1
1.002	85.474	0.025	0.0	1.00	17.8
1.003	85.332	0.029	0.0	1.00	17.8
3.000	85.790	0.015	0.0	1.32	23.3
4.000	86.180	0.000	0.0	2.59	45.8
3.001	85.670	0.029	0.0	1.74	30.7
1.004	85.277	0.066	0.0	1.07	18.9
5.000	86.170	0.002	0.0	1.46	25.8
5.001	85.900	0.004	0.0	1.00	17.8
1.005	85.168	0.091	0.0	1.49	59.4
6.000	85.810	0.004	0.0	1.96	34.7

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Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type
6.001	4.166	0.042	100.0	0.047	0.00	0.0	0.600	o	150	Pipe/Conduit
6.002	9.102	0.091	100.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit
1.006	5.967	0.317	18.8	0.036	0.00	0.0	0.600	o	225	Pipe/Conduit
1.007	36.439	0.364	100.0	0.019	0.00	0.0	0.600	o	225	Pipe/Conduit
7.000	12.801	0.160	80.0	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit
7.001	10.694	0.135	79.4	0.024	0.00	0.0	0.600	o	150	Pipe/Conduit
7.002	8.790	0.110	80.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit
7.003	5.986	0.063	95.0	0.033	0.00	0.0	0.600	o	150	Pipe/Conduit
8.000	8.681	0.087	100.0	0.040	5.00	0.0	0.600	o	150	Pipe/Conduit
8.001	5.531	0.581	9.5	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit
7.004	11.974	0.332	36.1	0.024	0.00	0.0	0.600	o	225	Pipe/Conduit
1.008	14.458	0.100	144.6	0.027	0.00	0.0	0.600	o	225	Pipe/Conduit
9.000	24.345	0.520	46.8	0.018	5.00	0.0	0.600	o	225	Pipe/Conduit
9.001	28.800	0.650	44.3	0.045	0.00	0.0	0.600	o	225	Pipe/Conduit
9.002	6.021	0.767	7.9	0.057	0.00	0.0	0.600	o	225	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
6.001	84.850	0.051	0.0	1.00	17.8
6.002	84.808	0.051	0.0	1.00	17.8
1.006	84.717	0.179	0.0	3.03	120.5
1.007	84.400	0.198	0.0	1.31	52.0
7.000	84.100	0.000	0.0	1.12	19.9
7.001	83.940	0.024	0.0	1.13	20.0
7.002	83.805	0.024	0.0	1.12	19.9
7.003	83.695	0.057	0.0	1.03	18.2
8.000	84.300	0.040	0.0	1.00	17.8
8.001	84.213	0.040	0.0	3.29	58.1
7.004	83.632	0.121	0.0	2.19	86.9
1.008	83.300	0.346	0.0	1.09	43.2
9.000	85.535	0.018	0.0	1.92	76.2
9.001	85.015	0.063	0.0	1.97	78.4
9.002	84.365	0.120	0.0	4.70	186.9

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Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type
10.000	26.660	0.267	100.0	0.050	5.00	0.0	0.600	o	225	Pipe/Conduit
9.003	14.020	0.258	54.3	0.054	0.00	0.0	0.600	o	225	Pipe/Conduit
9.004	10.318	0.140	73.7	0.013	0.00	0.0	0.600	o	225	Pipe/Conduit
1.009	17.180	0.172	99.9	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit
1.010	20.648	0.438	47.1	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit
1.011	21.259	0.214	99.3	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit
1.012	2.416	0.012	200.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
10.000	83.865	0.050	0.0	1.31	52.0
9.003	83.598	0.225	0.0	1.78	70.7
9.004	83.340	0.238	0.0	1.53	60.6
1.009	83.200	0.584	0.0	1.31	52.0
1.010	83.028	0.584	0.0	1.47	26.0
1.011	82.590	0.584	0.0	1.31	52.2
1.012	81.539	0.584	0.0	0.92	36.6

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	1	87.220	85.870	1.200	Open Manhole	600
1.001	o	150	2	87.220	85.755	1.315	Open Manhole	600
2.000	o	150	3	87.220	86.170	0.900	Open Manhole	600
1.002	o	150	4	87.180	85.474	1.556	Open Manhole	1200
1.003	o	150	5	87.130	85.332	1.648	Open Manhole	600
3.000	o	150	6	87.140	85.790	1.200	Open Manhole	600
4.000	o	150	7A	87.230	86.180	0.900	Open Manhole	600
3.001	o	150	7	87.020	85.670	1.200	Open Manhole	600
1.004	o	150	8	87.100	85.277	1.673	Open Manhole	600
5.000	o	150	9	87.220	86.170	0.900	Open Manhole	600
5.001	o	150	10	86.950	85.900	0.900	Open Manhole	600
1.005	o	225	11	87.130	85.168	1.737	Open Manhole	600

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	9.174	80.0	2	87.220	85.755	1.315	Open Manhole	600
1.001	28.112	100.0	4	87.180	85.474	1.556	Open Manhole	1200
2.000	20.237	29.1	4	87.180	85.474	1.556	Open Manhole	1200
1.002	14.226	100.0	5	87.130	85.332	1.648	Open Manhole	600
1.003	5.534	100.0	8	87.100	85.277	1.673	Open Manhole	600
3.000	7.034	58.6	7	87.020	85.670	1.200	Open Manhole	600
4.000	7.770	15.2	7	87.020	85.670	1.200	Open Manhole	600
3.001	13.301	33.8	8	87.100	85.277	1.673	Open Manhole	600
1.004	9.699	88.8	11	87.130	85.168	1.812	Open Manhole	600
5.000	12.876	47.7	10	86.950	85.900	0.900	Open Manhole	600
5.001	12.988	100.0	11	87.130	85.770	1.210	Open Manhole	600
1.005	34.639	76.8	15	86.250	84.717	1.308	Open Manhole	1500

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
6.000	o	150	12	86.860	85.810	0.900	Open Manhole	600
6.001	o	150	13	86.200	84.850	1.200	Open Manhole	1500
6.002	o	150	14	86.200	84.808	1.242	Open Manhole	600
1.006	o	225	15	86.250	84.717	1.308	Open Manhole	1500
1.007	o	225	16	86.470	84.400	1.845	Open Manhole	1200
7.000	o	150	17A	85.000	84.100	0.750	Open Manhole	600
7.001	o	150	17	85.110	83.940	1.020	Open Manhole	600
7.002	o	150	18A	85.110	83.805	1.155	Open Manhole	600
7.003	o	150	18	85.110	83.695	1.265	Open Manhole	600
8.000	o	150	19	85.750	84.300	1.300	Open Manhole	600
8.001	o	150	20	86.200	84.213	1.837	Open Manhole	600
7.004	o	225	21	85.110	83.632	1.253	Open Manhole	600
1.008	o	225	22	86.160	83.300	2.635	Open Manhole	1500
9.000	o	225	23	86.960	85.535	1.200	Open Manhole	1500
9.001	o	225	24	86.440	85.015	1.200	Open Manhole	1500

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
6.000	25.422	26.5	13	86.200	84.850	1.200	Open Manhole	1500
6.001	4.166	100.0	14	86.200	84.808	1.242	Open Manhole	600
6.002	9.102	100.0	15	86.250	84.717	1.383	Open Manhole	1500
1.006	5.967	18.8	16	86.470	84.400	1.845	Open Manhole	1200
1.007	36.439	100.0	22	86.160	84.036	1.899	Open Manhole	1500
7.000	12.801	80.0	17	85.110	83.940	1.020	Open Manhole	600
7.001	10.694	79.4	18A	85.110	83.805	1.155	Open Manhole	600
7.002	8.790	80.0	18	85.110	83.695	1.265	Open Manhole	600
7.003	5.986	95.0	21	85.110	83.632	1.328	Open Manhole	600
8.000	8.681	100.0	20	86.200	84.213	1.837	Open Manhole	600
8.001	5.531	9.5	21	85.110	83.632	1.328	Open Manhole	600
7.004	11.974	36.1	22	86.160	83.300	2.635	Open Manhole	1500
1.008	14.458	144.6	TANK	85.600	83.200	2.175	Open Manhole	1200
9.000	24.345	46.8	24	86.440	85.015	1.200	Open Manhole	1500
9.001	28.800	44.3	25	85.790	84.365	1.200	Open Manhole	1500

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
9.002	o	225	25	85.790	84.365	1.200	Open Manhole	1500
10.000	o	225	26	85.290	83.865	1.200	Open Manhole	1500
9.003	o	225	27	85.750	83.598	1.927	Open Manhole	1200
9.004	o	225	28	85.800	83.340	2.235	Open Manhole	1500
1.009	o	225	TANK	85.600	83.200	2.175	Open Manhole	1200
1.010	o	150	FCC1	85.300	83.028	2.122	Open Manhole	1500
1.011	o	225	C1	85.230	82.590	2.415	Open Manhole	1500
1.012	o	225	C2	85.045	81.539	3.281	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
9.002	6.021	7.9	27	85.750	83.598	1.927	Open Manhole	1200
10.000	26.660	100.0	27	85.750	83.598	1.927	Open Manhole	1200
9.003	14.020	54.3	28	85.800	83.340	2.235	Open Manhole	1500
9.004	10.318	73.7	TANK	85.600	83.200	2.175	Open Manhole	1200
1.009	17.180	99.9	FCC1	85.300	83.028	2.047	Open Manhole	1500
1.010	20.648	47.1	C1	85.230	82.590	2.490	Open Manhole	1500
1.011	21.259	99.3	C2	85.045	82.376	2.444	Open Manhole	1200
1.012	2.416	200.0		84.859	81.527	3.107	Open Manhole	0

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Online Controls for Storm

Complex Manhole: FCC1, DS/PN: 1.010, Volume (m³): 4.6

Orifice

Diameter (m) 0.095 Discharge Coefficient 0.600 Invert Level (m) 83.028

Orifice

Diameter (m) 0.070 Discharge Coefficient 0.600 Invert Level (m) 83.773

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Storage Structures for Storm

Cellular Storage Manhole: TANK, DS/PN: 1.009

Invert Level (m) 83.200 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	235.0	0.0	0.801	0.0	0.0
0.800	235.0	0.0			

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Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 1
Number of Online Controls 1 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.336
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 18.400 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status ON
DVD Status OFF
Inertia Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years) 30
Climate Change (%) 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	1	15 Winter	30	+0%					85.885
1.001	2	15 Winter	30	+0%					85.789
2.000	3	15 Winter	30	+0%					86.173
1.002	4	15 Winter	30	+0%					85.547
1.003	5	15 Winter	30	+0%	30/15 Winter				85.486
3.000	6	15 Winter	30	+0%					85.838
4.000	7A	60 Winter	30	+0%					86.180
3.001	7	15 Winter	30	+0%					85.728
1.004	8	15 Winter	30	+0%	30/15 Summer				85.466
5.000	9	15 Winter	30	+0%					86.186
5.001	10	15 Winter	30	+0%					85.927
1.005	11	15 Winter	30	+0%					85.279
6.000	12	15 Winter	30	+0%					85.828
6.001	13	15 Winter	30	+0%	30/15 Summer				85.022
6.002	14	15 Winter	30	+0%					84.958
1.006	15	15 Winter	30	+0%					84.869
1.007	16	15 Winter	30	+0%	30/15 Summer				84.737
7.000	17A	15 Winter	30	+0%					84.177
7.001	17	15 Winter	30	+0%	30/15 Summer				84.179
7.002	18A	15 Winter	30	+0%	30/15 Summer				84.159

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Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	-0.135	0.000	0.02		0.4	OK	
1.001	2	-0.116	0.000	0.11		1.9	OK	
2.000	3	-0.147	0.000	0.00		0.1	OK	
1.002	4	-0.077	0.000	0.48		7.8	OK	
1.003	5	0.004	0.000	0.60		8.7	SURCHARGED	
3.000	6	-0.102	0.000	0.23		4.5	OK	
4.000	7A	-0.150	0.000	0.00		0.0	OK	
3.001	7	-0.092	0.000	0.32		8.9	OK	
1.004	8	0.039	0.000	1.18		19.7	SURCHARGED	
5.000	9	-0.134	0.000	0.02		0.6	OK	
5.001	10	-0.123	0.000	0.08		1.2	OK	
1.005	11	-0.114	0.000	0.48		26.8	OK	
6.000	12	-0.132	0.000	0.03		1.1	OK	
6.001	13	0.022	0.000	1.23		15.8	SURCHARGED	
6.002	14	0.000	0.000	0.99		15.5	OK	
1.006	15	-0.073	0.000	0.65		51.5	OK	
1.007	16	0.112	0.000	1.15		56.4	SURCHARGED	
7.000	17A	-0.073	0.000	0.01		0.2	OK	
7.001	17	0.089	0.000	0.41		7.3	SURCHARGED	
7.002	18A	0.204	0.000	0.43		7.5	SURCHARGED	

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Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
7.003	18	15 Winter	30	+0%	30/15 Summer				84.141
8.000	19	15 Winter	30	+0%					84.398
8.001	20	15 Winter	30	+0%					84.263
7.004	21	15 Winter	30	+0%	30/15 Summer				84.089
1.008	22	15 Winter	30	+0%	30/15 Summer				84.032
9.000	23	15 Winter	30	+0%					85.576
9.001	24	15 Winter	30	+0%					85.094
9.002	25	15 Winter	30	+0%					84.450
10.000	26	15 Winter	30	+0%					83.971
9.003	27	15 Winter	30	+0%	30/15 Summer				83.941
9.004	28	120 Winter	30	+0%	30/15 Summer				83.682
1.009	TANK	120 Winter	30	+0%	30/15 Summer				83.673
1.010	FCC1	120 Winter	30	+0%	30/15 Summer				83.665
1.011	C1	120 Winter	30	+0%					82.674
1.012	C2	120 Winter	30	+0%					81.653

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
7.003	18	0.296	0.000	0.99		15.0	SURCHARGED	
8.000	19	-0.052	0.000	0.75		11.7	OK	
8.001	20	-0.100	0.000	0.24		11.6	OK	
7.004	21	0.232	0.000	0.41		30.1	SURCHARGED	
1.008	22	0.507	0.000	2.46		93.0	SURCHARGED	
9.000	23	-0.184	0.000	0.08		5.3	OK	
9.001	24	-0.146	0.000	0.27		19.3	OK	
9.002	25	-0.140	0.000	0.30		37.4	OK	
10.000	26	-0.119	0.000	0.30		14.2	OK	
9.003	27	0.118	0.000	1.04		64.0	SURCHARGED	
9.004	28	0.117	0.000	0.47		23.9	SURCHARGED	
1.009	TANK	0.248	0.000	0.33		15.2	SURCHARGED	
1.010	FCC1	0.487	0.000	0.58		14.2	SURCHARGED	
1.011	C1	-0.141	0.000	0.30		14.2	OK	
1.012	C2	-0.111	0.000	0.51		14.2	OK	

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